AGENDA
CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)

May 8, 2002 MEETING
1727 30th Street, Sacramento, CA 95816
TIME 9:00 AM

ORGANIZATION ITEMS

Estimated Time

1. INTRODUCTION 9:00

2. APPROVAL OF MINUTES (January 31, 2002 MEETING) 9:10

3. PUBLIC COMMENTS 9:15

At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties, have an opportunity to speak. At all times, please use the microphone and state your name, address, and business or organization for the record.

AGENDA ITEMS

4. PUBLIC HEARING 9:30

Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code (CVC), Caltrans is required to consult with local agencies and hold public hearings.

02-3	RIGHT EDGELINE (Proposal to amend Section 6-02.4 Edgelines of the State Traffic Manual	(Introduction) (Meis)	9:40
01-11	PORTABLE OR TEMPORARY SPEED DISPLAY SIGN (If the speed feedback sign is a traffic control device or not)	(Continued) (Meis)	10:30
01-5	ACCESSIBLE PEDESTRIAN SIGNALS (Proposal to adopt MUTCD language into the Traffic Manual)	(Continued) (Fisher)	11:00
	Lunch Break		**12:30-1:30**

5. REQUEST FOR EXPERIMENATION

02-4	PEDESTRIAN COUNTDOWN SIGNAL HEADS (Experiment request by the County of San Luis Obispo)	(Introduction) (Larsen)	1:30
01-3	PEDESTRAIN COUNTDOWN SIGNAL HEADS (Request to expand the experiment, City of Fountain Valley)	(Continued) (Fisher)	2:00

6. DISCUSSION ITEMS

02-5	ESTABLISHMENT OF SPEED LIMIT ZONES BASED ON THE ENGINEERING AND TRAFFIC SURVEY	(Introduction) (Babico)	2:30
02-6	AFFECT OF ADA REQUIREMENTS ON TRAFFIC CONTROL DEVICES	(Introduction) (Tanda)	3:00

7. INFORMATIONAL ITEMS

00-8	PEDESTRIAN COUNTDOWN SIGNAL HEADS (Final study report by the City of San Jose)	(Continued) (Tanda)	3:30
99-11	MUTCD ADOPTION BY CALTRANS (Update by Caltrans)	(Continued) (Meis)	4:00

8. Correspondences/ Miscellaneous

Letter from Mr. Michael Mankin, Manager, Access compliance Policy, division of the State of the Architect to California Building Standards Commission (CBSC) and response from CBSC to Mr. Mankin.

Resolution # 2001B-5 submitted by the California Council of the Blind.

Resolution #99-11 passed by the National Federation of the Blind

A Story from Sacramento Bee on the ongoing Experimentation with Pedestrian Countdown Signal Heads

9. NEXT MEETING

10. ADJOURN

ITEM UNDER EXPERIMENTATION

99-10 TACTILE PEDESTRIAN INDICATORS (Folkers)
(Experiment Agency-City of Los Angeles) (Fisher)
Status: No update received.

99-12 SPEED STRIPING FOR SMART CROSSWALKS (Meis)
(Experiment Agency-Caltrans D7)
Status: No update received.

99-13 ILLUMINATED PAVEMENT MARKERS ON MEDIAN BARRIERS (Experiment Agency-Caltrans D7) (Meis)
Status: No update received.

99-18 GROUND MOUNTED LED LIGHTS ON STOP BARS (Meis)
(Experiment Agency-City of Anaheim)
Status: The City of Anaheim submitted a fourth progress report dated June 2001. The City of Anaheim will collect further data and submit to CTCDC.

00-1 BICYCLE PAVEMENT MARKING (Banks)
(Experiment Agency-City of San Francisco)
Status: The city has received approval to hire a consultant to do the study.

00-3 JAKE BRAKE SIGN (Meis)
(Experiment Agency-City of Auburn)
Status: The signs were installed during the summer of 2001. The post study will be conducted during the summer of 2002.

00-6 PEDESTRIAN COUNTDOWN SIGNAL HEADS (Banks)
(Experiment Agency-City of San Francisco)
Status: No further update, the interim report was submitted during the 01/31/02 meeting.

00-8 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of San Jose)
Status: The City San Jose will provide final study report during the May 2002 meeting.

00-9 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of Stockton)
Status: Countdown signals were insalled in January 2002. City has received positive comments. The City will provide a before and after study.

01-3 PEDESTRIAN COUNTDOWN SIGNAL HEADS (Fisher)
(Experiment request by the City of Fountain Valley)
Status: The City has submitted their final report to the Committee.

01-4 TACTILE PEDESTRIAN INDICATORE WITH AUDIBLE INFORMATION (Experiment request by the City of Santa Cruz) (Tanda)
Status: No update.

01-7 PEDESTRIAN COUNTDOWN SIGNAL HEAD (Tanda)
(Experiment Agency-City of Oakland)
Status: The city has received approval from the HHWA and working to acquire funds in the FY 2002-03 budget.

01-9 IN-ROADWAY WARNING LIGHTS AT R/R CROSSINGS (Meis)
(Experiment requests by CPUC in cooperation Kern Co. & City of Fresno)
Status: CPUC is in process to hire consultant firm to conduct study.

01-12 BLINKERSTOP SIGN (Experiment request by Caltrans) (Meis)
Status: Report was sent to members by e-mail.

STATUS OF CALTRANS ACTION ON PAST ITEMS

Item 90-7 BICYCLE SIGNAL HEADS (BSH)

The Traffic Manual will be changed to reflect the BSH warrants, so that the public agencies will be able to use the Warrants to install these devices on their roadways. The Committee will be notified, when Caltrans develop the standard plans for BSH.

Item 93-18 CROSSWALKS, SEQUENTIAL LIGHTING (In-Roadway Warning Lights (IRWL) at Crosswalks)

The final text will be posted on the Traffic Operations website as soon as finalized.

Item 99-3 AUDIBLE PEDESTRIAN SIGNAL POLICY

Caltrans will work with the CTCDC, the California Council of the Blind (CCB) and other individuals interested in this item to resolve these issues along with Agenda Item 01-5, "Accessible pedestrian Signals."

Item 01-1 U-TURN SIGNAL HEADS INDICATOR

Caltrans will develop appropriate standards to ensure visibility and make the U-turn signal head indicator an official traffic control device by inclusion in the Caltrans Traffic manual.

01-6 SUPPLEMENT SIGNS ON CHANNELIZERS

Caltrans will work with the Committee on this item.

02-3 RIGHT EDGELINE 1 0f 3

During the last CTCDC meeting, the Committee members discussed the draft verbiage on Item 00-4, "use of raised pavement markers in a transverse pattern". The verbiage was as follows:

"Raised pavement markers (RPMs) may be used to supplement transverse or longitudinal pavement markings, except retroreflective raised pavement markers should not be used for right edgelines. The use of retroreflective RPMs on the right edgeline may lead the motorist to believe there is another lane to the right of the markers. RPMs should not be used for right edgelines unless other available options have been considered, such as raised and inverted profile thermoplastic stripe, ground-in or rolled-in rumble strip. If either retroreflective or non-reflective RPMs are used on a right edgeline, an engineering study should be conducted documenting the reasons for their use."

After the discussion, the committee members recommended including a portion of the proposed verbiage under Section 6-01.3 Material and adopted that portion as a resolution *"Raised pavement markers (RPMs) may be used to supplement transverse or longitudinal pavement markings. RPMs shall not be placed either on or within the marked crosswalks. If either retroreflective or non-reflective RPMs are used on a right edgeline, an engineering study should be conducted documenting the reasons for their use."* The Committee further recommended that the remaining portion of the original draft to be included in the "**Section "Right Edgeline"** and Caltrans bring draft back to the Committee for review and discussion.

Caltrans recommends the Committee to consider deleting the last sentence from the adopted resolution *"If either retroreflective or non-reflective RPMs are used on a right edgeline, an engineering study should be conducted documenting the reasons for their use"* and include this with the remaining portion of the original draft to the **Section "Right Edgeline"**.

To clarify, the verbiage to be included in to the **Section 6-01.3 Material** is as follows:

"Raised pavement markers may be used to supplement transverse or longitudinal pavement markings (for right edgeline, see Section 6-02.4). RPMs shall not be placed either on or within the marked crosswalks."

And;
The following verbiage shown in Italic and underlined is suggested to be included under the **Section "Right Edgeline."** Two alternatives that were suggested in the original draft are not recommended to include under the Section "Right Edgeline."

2. RIGHT EDGELINE
A right edgeline shall consist of a solid 100 mm wide white line. The edgeline should be placed 50 mm in from the edge of traveled way, approximately 3.6 m from the laneline or centerline on highway mainlines, ramps, and connectors. See Figure 6-6, RIGHT EDGELINE AND RIGHT EDGELINE EXTENSION THROUGH INTERSECTIONS. *"In general, raised pavement markers (RPMs) are not used to supplement the right edgeline. The use of RPMs on the right edgeline may lead the motorists to believe there is another lane to the right of the markers. If either retroreflective or non-retroreflective RPMs markers are used on a right edgeline, an engineering study should be conducted documenting the reason for their use."* *(Continued)*

Generally, the solid edgeline should be dropped at the beginning of intersection flares. In heavy fog areas, or locations where additional guidance would be beneficial, a dashed 100 mm wide white right edgeline may be continued across an intersection. Edgeline is not used at turnouts. See Figure 6-22, SIGNING AND MARKING TURNOUTS

The following are the current Sections in the Traffic Manual and in the MUTCD, which discussed the "Right Edgeline."

6-02.4 Edgelines

Edgelines delineate the edge of traveled way for motorists. They have a unique value as a visual reference during adverse weather and visibility conditions. They also are used to reduce driving on paved shoulders or refuge areas of lesser structural strength than the adjacent pavement. Where more emphasis is required, 45° diagonal 300 mm wide lines may be added on shoulders. Diagonal lines, if used, shall be the same color as the edgeline. Edgelines are generally not continued through intersections and are not broken for driveways.

Edgelines shall be used on all State highways, except urban type streets with curbs, parking provisions, etc. Edgelines may be used on streets and highways under local jurisdiction.

1. LEFT EDGELINE

A left edgeline shall consist of a solid 100 mm wide yellow line, yellow reflective pavement markers or a combination of line and markers as shown in Figure 6-5, LEFT EDGELINES FOR DIVIDED HIGHWAYS.

Solid double yellow lines may be used for more emphasis when motorists tend to use the shoulder for a through lane or where encroachments onto the shoulder occasionally occur.

Left edgeline patterns for median islands are shown in Figure 6-7, MEDIAN ISLANDS.

2. RIGHT EDGELINE

A right edgeline shall consist of a solid 100 mm wide white line. The edgeline should be placed 50 mm in from the edge of traveled way, approximately 3.6 m from the laneline or centerline on highway mainlines, ramps, and connectors. See Figure 6-6, RIGHT EDGELINE AND RIGHT EDGELINE EXTENSION THROUGH INTERSECTIONS.

Generally, the solid edgeline should be dropped at the beginning of intersection flares. In heavy fog areas, or locations where additional guidance would be beneficial, a dashed 100 mm wide white right edgeline may be continued across an intersection. Edgeline is not used at turnouts. See Figure 6-22, SIGNING AND MARKING TURNOUTS

MUTCD 2000:
Section 3B.04 White Lane Line and Right Edge Line Pavement Markings and

Warrants

Standard:
When used, lane line pavement markings delineating the separation of traffic lanes that have the same direction of travel shall be white.

Support:
Typical applications of lane line markings are shown in Figures 3B-2, 3B-3, 3B-7 through 3B-13, 3B-21, 3B-23, and 3B-25.

Standard:
Where crossing the lane line markings with care is permitted, the lane line markings shall consist of a normal broken white line. Where crossing the lane line markings is discouraged, the lane line markings shall consist of a normal solid white line.

Option:
Solid white lane line markings may be used to separate through traffic lanes from auxiliary lanes, such as uphill truck lanes, left- or right-turn lanes, and preferential lanes. They may also be used to separate traffic lanes approaching an intersection. Wide solid lane line markings may be used for greater emphasis.

Standard:
Where crossing the lane line markings is prohibited, the lane line markings shall consist of two normal solid white lines. Lane line markings shall be used on all freeways and Interstate highways.

Guidance:
Lane line markings should be used on all roadways with two or more adjacent traffic lanes that have the same direction of travel. Lane line markings should also be used at congested locations where the roadway will accommodate more traffic lanes with lane line markings than without the markings.

Standard:
If used, the right edge line pavement markings shall consist of a normal solid white line to delineate the right edge of the roadway.

01-11 PORTABLE OR TEMPORARY SPEED DISPLAY SIGN 1 of 1

During the last CTCDC meeting, there was a brief discussion between Committee members, either to bring this item back for further discussion or leave it the way it was decided during the September 2001 CTCDC meeting. Wayne Tanda suggested that it is not a traffic control device and his jurisdiction has been used in school zones to calm traffic. He is planning to share that success with other agencies. John Fisher noted that if the Committee did not give any guidance, there might be a number of different vendors, providing different types of formats for the sign. Wayne responded that there are already different types of formats, maybe different colors too. Wayne further stated that the speed feedback sign in his opinion are not a traffic control device.

Mark Greenwood stated that during the last meeting the motion “the portable sign presented to this Committee is not a traffic control device” failed. Ray Mellen and Wayne Tanda suggested placing this item on the agenda again to make a decision whether it is a traffic control device or not. John Fisher and Jim Larsen also supported placing it on the agenda. Further, John requested that Caltrans provide a statement as to whether it believes the speed feedback sign is a traffic control device and if it seeks the Committee’s guidance on standardization. The item on the agenda would be: "If the Speed Feedback Sign is A Traffic Control Device or Not."

Following is an information from CVC, and FHWA proposal on Speed Display Sign

CVC440 (Official Traffic Control Device)

440. An "official traffic control device" is any sign, signal, marking, or device, consistent with Section 21400, placed or erected by authority of a public body or official having jurisdiction, for the purpose of regulating, warning, or guiding traffic, but does not include islands, curbs, traffic barriers, speed humps, speed bumps, or other roadway design features.

FHWA Proposal

The MUTCD team is proposing to specifically include the "YOUR SPEED XX" dms/cms speed trailer in the speed limit signs section of Part 2B of the MUTCD in the NPRM (Revision #2); that will make the "sign" portion of a speed display trailer a traffic control device within the approved colors for signs/CMS displays in Table 2A-4 which will include white, yellow, FYG as colors (also includes reverse screens); orange LED's are for Part 6 application only.

01-5 ACCESSIBLE PEDESTRIAN SIGNALS 1 of 4

During the last CTCDC meeting, Chairman Larsen stated that the item would be continued for hearing during the next meeting.

Theresa Gabriel, Caltrans, ITS Branch, commented that she prefers that the requirement to install these devices should be based on the need. The MUTCD 2000 and current Traffic Manual guidelines are in harmony on the installation of these devices. Theresa further stated that if the APS is integrated to all intersections automatically at new signal installations or during modifications, we might be ignoring the safety of the pedestrian and/or drivers. Theresa raised the following concerns:

- A survey needs to be completed to assess the actual needs of APS and/or Audible Pedestrian Signal.
- Ignoring other facts/factors related to the intersections geometrical restriction
- Ignoring factors related to authorized/restricted pedestrian movements for certain approaches at the intersection.
- Ignoring the ambient noise level at the intersection and other types of surroundings (trucks, birds mimicking the device sounds, industrial area, rural area, urban area, surrounding business, neighboring hospitals, fire house, buses, etc.).
- Ignoring the special needs for the surrounding residents at the intersection (elder residents, school, presence (or lack) of citizens needs with any other types of mobility. restriction/impairment.
- Ignoring the engineering decision/judgment for the appropriate intersection design.

Theresa further added that the Manual on Uniform Traffic Control Devices (MUTCD) is currently in harmony with the Traffic Manual for guidelines needed prior to the installation of similar devices (i.e., it should be installed as needed). It has been proven successful in the past for installation of the Audible Pedestrian provision upon request. Caltrans did not deny any request in the past to install the device at needed intersections. All the above factors do not include the financial burden on the districts to include the device for all intersections (installed or modified), and the related maintenance cost to maintain such devices.

The Chairman continued the public hearing until the next meeting and opened the item for the Committee's discussion.

Wayne Tanda asked if Caltrans could identify the fundamental differences on APSs among the MUTCD 2000, State Traffic Manual and the suggested language submitted by the CCB under Resolution 2001B-5 before the next CTCDC meeting. Devinder responded that he would make an effort to summarize the main differences.

John Fisher noted that the primary fundamental differences between CCB and the MUTCD 2000 on APSs are as follows:

- The CCB recommended that all accessible pedestrian signals must have an auditory tone to announce the walk interval, where in the MUTCD 2000 it is optional.

- The CCB recommended that whenever the State or a local agency installs new or upgrades to the existing traffic signals, the signal system shall be equipped with APSs, where in the MUTCD 2000 it is based on the need.
- The CCB recommended that the desirability of the APSs at specific existing locations, the professional to be consulted in this matter shall be an orientation and mobility instructor certified by the Academy of Certification of Vision Rehabilitation and Education Professionals (ACVREP), not the agency staff. In the MUTCD 2000, it is a joint effort by the agency staff and by the requestor.

The resolution received from the California Council of the Blind and resolution passed by the National federation of the Blind are included under the Agenda Item, Correspondences/ Miscellaneous.

ACCESSIBLE PEDESTRIAN SIGNALS
COMPARISON OF REQUIREMENTS (PARAPHRASED)

Subject	Traffic Manual	MUTCD	CCB Proposal
General Philoso-phy	APS may be considered when an engineering study and evaluation have been conducted. There must be a demonstrated need in the form of a request.	Many signalized locations will not require APS, as persons with visual difficulties often can depend on the stop-and-go noise of traffic. However, at signalized intersections that present "difficulties" (seven types are cited), an engineering study should be conducted. The installation of APS should be based on an engineering study.	The merit of the installation of APS must be determined by the safety and accessibility needs of the requestor. New Signals - Shall be automatically equipped. Signal Upgrades - Shall be automatically equipped. Existing Signals -- Must be addressed within a reasonable period of time.
Outside Experts	Individual or group requesting the device should agree to train visually impaired.	Local organizations can often act as important advisors to the traffic engineer. Additionally, orientation and mobility specialists might be able to provide a wide range of advice.	The professional to be consulted shall be an orientation and mobility instructor certified by ACVREP. Agreement among the various outside organizations shall not be required.
Bird Chips	"Recommended". "Cuckoo" for north/south direction and "Peep Peep" for east/west direction.	Audible tones, including bird chirps, are among the several APS options. When choosing audible tones, possible extraneous sources of sound (such as ... birds) shall be considered in order to eliminate potential confusion. Audible tones should be carefully selected to avoid misleading pedestrians when there is: an unsignalized, channelized right turn; multi-leg approaches; complex signal phasing; or exclusive pedestrian phase.	Where APS is used, there must be bird chirps or verbal messages. If bird chirps are used, they must be "Cuckoo" for north/south direction and "Peep Peep" for east/west direction. Where bird chirps are used, all striped crosswalks at the intersection shall be outfitted with these devices.

Continued

Subject	Traffic Manual	MUTCD	CCB Proposal
Verbal Messa-ges	(Silent)	Verbal messages are among the APS options. The message shall use the words, "Walk Sign" and may include the name of the street to be crossed.	If bird chirps are not used, then verbal messages shall be used. Where used, verbal messages shall provide a clear message that the walk interval is in effect, as well as to which crossing it applies. Where verbal messages are used, all striped crosswalks at the intersection shall be outfitted with these devices.
Vibro-tactile Devices	(Silent)	Vibrotactile devices are among the APS options. By inference, they would be considered where audible tones might cause potential confusion, as described under "Bird Chirps".	Mandatory, even with bird chirps or verbal messages.
Push-button Locator Tones	(Silent)	Pushbuttons should be audibly locatable. If used, they shall have a repetition rate slower than that of the audible tone. They should no more than 5 db louder than the ambient sound.	Mandatory.
Pedest-rian Push-Buttons (PPB's)	PPB's should be provided.	Pushbuttons or passive pedestrian detection may be used. At locations with pre-timed signals or non-actuated approaches, PPB's may be used to activate APS. See Figure 4E-2 for PPB locations.	Mandatory. Indicates concurrence with MUTCD Figure 4E-2.

REQUEST FOR EXPERIMENATION

02-4 PEDESTRIAN COUNTDOWN SIGNAL HEADS 1 of 3

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS
Noel King, Director
County Government Center, Room 207 • San Luis Obispo CA 93408 • (805) 781-5252
Fax (805) 781-1229 email address: engr@co.slo.ca.us

January 20, 2002

Jim Larsen, CSAC Chairman
Associate Director
Resource Management Agency, Tulare County
908 S. Giddings Street
Visalia CA 93277

Subject: Request for Permission to Use Experimental Traffic Control Device: Pedestrian Countdown Signal

Dear Mr. Larsen:

INTRODUCTION

The County of San Luis Obispo Department of Public Works and Transportation (herein after referred to as "the County") proposes to install a countdown device for pedestrians at the South Bay Boulevard/El Moro crosswalk. This device shall be in addition to the standard graphic signals to inform those crossing the street of how much time they have to complete the traverse.

The County expects that this device will be an improvement over the standard "walk/don't walk" and "red hand/green walker" signals by letting pedestrian know exactly how much time they have to get across the street within a protected phase.

Since this device is in use by numerous communities by permission of the CTCDC, the County is not including video or photographs.

This device is currently in use in San Francisco, Walnut Creek, Fountain Valley, San Jose and Stockton. The City of San Francisco has found it to be so successful in reducing pedestrian crossing incidents that it is requesting an expansion of the program.

Problem Statement

The intersection of South Bay Boulevard with El Moro Street in Los Osos is a school crossing. It is currently unsignalized, with a crossing guard on duty. The County intends to signalize this intersection and add a left turn lane southbound and a right turn lane

northbound. This will make the crossing distance for pedestrians (who are predominantly middle school children) approximately 60 feet. A child who steps off of the curb too late will have to decide between going back and waiting for the next cycle, or attempting to sprint across the road.

The County of San Luis Obispo is a rural county, but areas such as Los Osos are slowly becoming more urbanized. The County does not have a history of higher than average pedestrian related collisions in this area. The installation of this device would be a proactive measure to maintain the same level of safety for school children after the installation of traffic signals and the removal of the crossing guard.

South Bay Boulevard is a rural high speed arterial. That section of South Bay Boulevard has an ADT of 10,000 and an 85th percentile speed of 60 mph, though vehicles have been clocked at much higher speeds. The issue of pedestrians traversing the crosswalk is one of safety rather than traffic flow.

Scope

The County proposes to install this device in only one location at this time, which is the intersection of South Bay Boulevard and El Moro Street in the community of Los Osos in San Luis Obispo County. The device will be installed to serve the crosswalk that traverses South Bay Boulevard, which has a paved width of approximately 60ft.

Work Plan

The County intends to signalize this intersection no later than the summer of 2002.

The County will develop an informational brochure to be distributed to teachers and parents of students at the middle school, explaining the operation of the device and our reasons for installing it.

Evaluation Procedures

The County will compare the rate of pedestrian related collisions in crosswalks served by traditional devices within the County with those of the South Bay Boulevard/El Moro experimental device.

The County will compare documented collisions and complaints at these intersections.

The County will monitor walking speeds to insure that the phase is properly timed.

The County will also conduct field surveys to observe how well pedestrians are clearing the intersections at these sites, in order to determine whether the countdown device is a significant positive factor in getting pedestrians to complete their traverse within the protected phase.

02-4 PEDESTRIAN COUNTDOWN SIGNAL HEADS 3 of 3

The County will be working closely with the principal of Los Osos Middle School during the course of this experiment. Input will be sought from parents and school administrators on the effectiveness of the device.

Time Period

Given the timing of this request, the device would probably not be installed until sometime towards the end of the school year. The County therefore requests a test period of one full year so that we may test the device for a full school year.

Your consideration of this request is appreciated. The County is looking forward to the opportunity to test this device as a proactive measure to keep the school children of Los Osos safe in the face of increasing traffic volumes and speeds.

If I can provide any additional information, please call me at (805) 788-2318 or you may e-mail me at rgaglione@co.slo.ca.us.

Sincerely,

Rosemarie Gaglione

ROSEMARIE GAGLIONE
Project Engineer

File: Contract No. P12A344

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DISCUSSION ITEMS

02-5 ESTABLISHMENT OF SPEED LIMIT ZONES BASED ON THE ENGINEERING AND TRAFFIC SURVEY

Jacob Babico apprised the Committee that the County of San Bernardino CHP area enforce the speed limit established based on the Radar Speed Survey. The CHP do not use the traffic study as justification to enforce the zone. CVC section 627 has a clear definition of "ENGINEERING AND TRAFFIC SURVEY" which states: "as used in this code, means a survey of highway and traffic conditions in accordance to methods determined by the Department of Transportation for use by state and local authorities." What happened in their case that County have posted a 45 M.P.H. speed limit signs based on engineering study rather than radar speed survey, but the 85th percentile was over 55 M.P.H. Jacob requested for Committee comments on this issue.

CORRESPONDENCES/MISCELLANEOUS

MEMORANDUM

Date: October 15, 2001

To: STAN NISHIMURA
Executive Director

California Building Standards Commission
1525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936

From: MICHAEL J. MANKIN, AIA
Manager, Access Compliance Policy
Division of the State Architect
Department of General Services

Subject: REQUEST FOR DETERMINATION

The Division of the State Architect, Access Compliance (DSA/ C) is requesting a determination from the California Building Standards Commission (CBSC) if regulations adopted by the California Department of Transportation (Caltrans) are Building Standards and subject to the CBSC adoption process. Specifically the Federal Highway Administration (FHWA) publishes the Manual on Uniform Traffic Control Devices (MUTCD), which contains national design, application, and placement standards for traffic control devices. These devices include signs, signals, and pavement markings.

Caltrans publishes a Traffic Manual, which is in substantial conformance with the MUTCD. Our concern is those provisions adopted by Caltrans in their Traffic Manual are Building Standards and in conflict with those standards adopted in the California Code of Regulations, Title 24, Part 2.

Caltrans has a California Traffic Control Devices Committee which will be meeting on September 27, 2001, 1220 N Street, Sacramento, at 9:00 AM. Our particular concern is the following items may be building standards: 1) 01-5 Accessible Pedestrian Signals (Proposal to adopt MUTCD language into the Traffic Manual); 2) 01-10 Red Flags Use At Pedestrians Crosswalks (Experiment request by the City of Berkeley); 3) Pedestrian Countdown Signal Heads (Experiment Agency-County of Sacramento) and 4) 99-11 MUTCD Adoption by Caltrans (Update by Caltrans).

Our mandate by Government Code Section 4450 is to ensure that all buildings, structures, sidewalks, curbs, and related facilities, constructed in this state by the use of state, county, or municipal funds, or the funds of any political subdivision of the state shall be accessible to and usable by persons with disabilities.

Our office is mandated to develop and submit proposed building standards to the California Building Standards Commission for approval and adoption pursuant to Chapter 4 (commencing with Section 18935) of Part 2.5 of Division 13 of the Health and Safety Code. Our request for determination is to clarify if those standards adopted by Caltrans fall into the definition of a building standard and subject to CBSC review, and publication in the California Code of Regulations, Title 24.

For your information, DSA/AC is including a copy of the September 27, 2001 agenda for the California Traffic Control Devices Committee as well as MUTCD Supplement adoption by Caltrans.

Your determination will be of great interest to the DSA/AC as many of those standards currently published in California Code of Regulations, Title 24 would seem to fall in the same standards category as those adopted by Caltrans. Perhaps all of these standards should be relocated to the California Code of Regulations, Title 24, Part 11 to ensure uniformity and enforcement of standards within California. Nonbuilding regulations would still need to be enforced by the building official under the law, perhaps through Part 11 not Part 2.

We look forward to your determination and thank you for your forthcoming decision.

If you have any questions, feel free to contact me at (916) 322-4700, or by email at,
HYPERLINK mailto:michael.mankin@dgs.ca.gov
michael.mankin@dgs.ca.gov
MJM:ma

Enclosures

cc: David Cordova, Sr. Transportation Engineer, ADA, Caltrans
Doug Ford, ADA/Disability Program Administrator, Caltrans
Richard Skaff, Deputy Director, S.F. Mayor's Office on Disability
DGS Legal

FEB 26 2002 09:42 FR CBSC 916 263 0959 TO 6533055 P.02/03

STATE OF CALIFORNIA — STATE AND CONSUMER SERVICES AGENCY GRAY DAVIS, Governor

CALIFORNIA BUILDING STANDARDS COMMISSION
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833-2936
(916) 263-0916
FAX (916) 263-0959
http://www.bsc.ca.gov

February 25, 2002

Michael Mankin, AIA
Manager, Access Compliance Policy
Division of the State Architect
1130 K Street, Suite 101
Sacramento, CA 95814

RE: Request for Determination

Dear Mr. Mankin:

Thank you for your letter of October 15, 2001. The purpose of this letter is to provide you my views in this matter. Your letter asks the following question:

> *"The Division of the State Architect, Access Compliance (DSA/AC) is requesting a determination from the California Building Standards Commission (CBSC) if regulations adopted by the California Department of Transportation (CALTrans) are building standards and subject to the CBSC adoption process. Specifically the Federal Highway Administration (FHWA) publishes the Manual on Uniform Traffic Control Devices (MUTCD), which contains national design, application, and placement standards for traffic control devices. These devices include signs, signals, and pavement markings."*

Based upon the information contained in your letter, the MUTCD does not appear to be a building standard nor is its adoption subject to the CBSC adoption process. The basis for my conclusion is that the MUTCD does not appear to meet the definition of a building standard pursuant to Health and Safety Code (H&SC) Sections 18908(d) and 18909 (a) through (c), which define the terms: buildings and building standards. Furthermore, H&SC Section 18908(d) explicitly does not include highways as a building.

H&SC Section 18908(d) states:

> *Building does not include machinery, equipment, or appliances installed for manufacture or process purposes only, any construction installations which are not a part of a building, or any tunnel, mine shaft, highway, or bridge.*

H&SC Section 18909 states:

> ***(a)*** *"Building standard" means any rule, regulation, order, or other requirement, including any amendment or repeal of that requirement, which specifically regulates, requires, or forbids the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building, structure, factory-built housing, or other improvement to real property, including fixtures therein, and as determined by the commission.*
>
> ***(b)*** *Except as provided in subdivision (d), "building standard" includes architectural and design functions of a building or structure, including, but not limited to, number and location of doors, windows, and other openings, stress or loading characteristics of materials, and methods of fabrication, clearances, and other functions.*
>
> ***(c)*** *"Building standard" includes a regulation or rule relating to the implementation or enforcement of a building standard not otherwise governed by statute, but does not include the adoption of procedural ordinances by a city or other public agency relating to civil, administrative, or criminal procedures and remedies available for enforcing code violations.*

Should you wish a formal determination from the Commissioners, please contact me at (916) 263-0916, and I will place your question on the Commission's meeting agenda for their determination.

Respectfully yours,

Stanley T. Nishimura
Executive Director

cc: All Commissioners
David Cordova, Sr. Transportation Engineer, ADA, Caltans
Doug Ford, ADA/Disability Program Administrator, Calttans
Richard Skaff, Deputy Director, S.F. Mayor's Office on Disability

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CALIFORNIA COUNCIL OF THE BLIND

December 21, 2001

Devinder Singh,
Executive Secretary
California Traffic Control Devices Committee (CTCDC)
Department of Transportation
Division of Traffic Operations MS 36
P.O. Box 942874
Sacramento, CA 94274-0001

Dear Mr. Singh:

I am writing on behalf of the California Council of the Blind, Inc. (CCB), a state affiliate of the American Council of the Blind (ACB), is a statewide membership organization. Its members are blind, visually impaired and fully sighted individuals who are concerned about the dignity and well-being of blind and visually impaired people throughout the state. Formed in 1934, the Council has become the largest organization of people who are blind or visually impaired in the state of California, with over 50 chapters and special interest affiliates and a membership of over 3,000.

Through a variety of programs and services, CCB enables people who are blind or visually impaired to live and work independently and to participate in their own communities. The Council has influenced change in such areas and issues as civil rights, employment, rehabilitation, transportation, environmental access, travel, recreation, Social Security, and other benefits. To strengthen advocacy efforts, the Council often works in coalition with other state disability groups.

As suggested by the California Traffic Control Devices Committee (CTCDC), I went to the California Council of the Blind Fall convention to request comments and recommendations in response to agenda item 01-5. Those who were in attendance at the convention discussed the possible adoption of section 4E.06 Accessible Pedestrian Signals of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) Millennium edition December 2000 as a replacement for the current section 9-04.8 Audible Pedestrian Signals of the California Traffic Manual.

The outcome of the organization's discussion on this matter was the unanimous passage of resolution 2001B-5 Accessible Pedestrian Signals Minimum Standards, which is attached.

I was authorized by the California Council of the Blind to forward to you resolution 2001B-5 Accessible Pedestrian Signals Minimum Standards and to share the thoughts and opinions of the membership regarding item 01-5.

What is to follow are items that need to be considered by the CTCDC during its deliberations on item 01-5:

1. Consistency and standardization of the design features found in accessible pedestrian signal technologies is of paramount importance to persons who are blind or visually impaired, while permitting the use of new technology as it becomes available.

2. Whenever the state or a local jurisdiction is installing a new, or upgrading an existing traffic signal, the signal shall be automatically equipped with accessible pedestrian signals. Also, the state and local jurisdictions must have a written process for addressing request for the installation of an accessible pedestrian signal at an existing signalized location, and this must be addressed within a reasonable period of time.

3. Local organizations that provide support services to pedestrians who have visual and/or hearing disabilities, can often act as important advisors to traffic engineers when consideration is being given to the type of accessible pedestrian signals that will be installed in a community and/or at a specific street crossing. However, local organizations must not be given the power or opportunity to determine the merit of the installation of accessible pedestrian signals in a community and/or at a specific street crossing.

   The merit for the installation of an accessible pedestrian signal must be determined by the safety and accessibility needs of the requester.

4. Whenever the state or a local jurisdiction is evaluating the desirability of placing accessible pedestrian signals at a specific existing signalized location, the only professional trained to work with the blind and visually impaired that is to be consulted in this matter shall be an orientation and mobility specialist certified by the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) http://www.acvrep.org/coms.html (Note: No longer is the certification performed by the Association for the Education and Rehabilitation for the Blind and Visually Impaired (AER)). A Certified Orientation and Mobility Specialist must demonstrate knowledge and understanding of a multitude of competencies in Orientation and Mobility (O&M). The competency

skills that must be possessed by an Orientation and Mobility Specialist include, but are not limited to the following:

* Analysis and Identification of Intersections and Traffic Patterns
* The use of traffic control devices
* Techniques for crossing streets
* Problem solving
* The use of public transportation

The development of these competency skills is only found in the graduate school training of an orientation and mobility specialist. Other professionals/staff (e.g. rehabilitation counselor, rehabilitation teacher, special education teacher, social worker, optometrist, ophthalmologist, etc.) who have been taught to work with the blind or the visually impaired are not given these competency skills training as part of their graduate school education. There are no other similarly trained professionals and/or staff that can provide the knowledge and expertise needed by a traffic engineer, who is evaluating the desirability of placing accessible pedestrian signals at a specific existing signalized location.

5. When discussing section 4E.06 Accessible Pedestrian Signals, it must be done in the context of what is provided in sections 4E.07 Pedestrian Detectors and 4E.08 Accessible Pedestrian Signal Detectors. Sections 4E.06, 4E.07, and 4E.08 lack many significant and valuable points that are covered in the "Building a True Community Final Report Public Rights-of-Way Access Advisory Committee January 10, 2001, website: http://www.access-board.gov/prowac/commrept/index.htm." There are areas in these two documents in which they are in harmony. There are some points that are covered in one document, but not in the other and some points that are mandatory in one document, but are optional in the other. The relevant sections of both documents need to be assimilated into one revised section in the next edition of the California Traffic Manual.

6. When an intersection is equipped with audible pedestrian signals, all the striped crosswalks shall be outfitted with these devices. There shall be a device installed at the terminus of each striped crosswalk.

7. At all intersections, pedestrian push buttons must clearly indicate which crosswalk signal is actuated by each push button. The printed or tactile arrow directly above the push button must indicate directionality by pointing in the same direction as the associated crosswalk thus avoiding the blind pedestrian being oriented away from the opposite intended corner. At corners of signalized locations where two pedestrian push buttons are provided, the push buttons need to be separated by a distance of at least 3 m (10 ft). This enables pedestrians who have visual impairments to distinguish and locate the appropriate push button and the associated crosswalk.

When an accessible pedestrian signal is mounted on a pedestrian push button pole, precise orientation is extremely critical. These audible pedestrian push buttons provide auditory directionality and when they are oriented even a few degrees out of alignment with the associated crosswalk, pedestrians may inadvertently travel out of the crosswalk. Audible signals must be mounted within the crosswalk to enhance their directionality. Also, where two speakers are used at the same corner, they must be horizontally separated by at least 10 feet (3 meters) to avoid confusion as to which push button is announcing the onset of the walk phase.

Multiple pedestrian push buttons mounted on a single pole do not achieve the equal directionality and clarity as to which pedestrian push button is providing the auditory announcement of the onset of the walk phase.

Push buttons including those with audible pedestrian signals should be located and have some of the following features:

* Push buttons need to be located adjacent to a clear level landing, adjacent to the landing of a curb ramp or transition ramp, with a maximum mounting height of 42 inches, parallel to the direction of the crosswalk, no further than 5 feet from the extension of the crosswalk lines and within 10 feet of the curb line.

* All pushbuttons with or without audible pedestrian signals capability must be audibly locatable.

* There needs to be a visual contrast at least 70 percent between the button and its housing.

* Push buttons shall be a minimum of 2 inches (51 mm) across in at least one dimension.

It would be advisable for the state and local jurisdictions to place multiple pedestrian push buttons on separate poles so to provide blind pedestrians with better directionality when making street crossings and clear auditory announcement of the onset of the walk phase. Also, it will be more cost-effective for new signalized intersections to be equipped with pedestrian push buttons on separate poles in anticipation they may need to be retrofitted at a later date with pedestrian push buttons that have audible pedestrian signal capability.

In closing it should be self-evident from the above issues and resolution 2001B-5 that item 01-05 must be addressed in a methodical process to ensure that all stakeholders' interest are fairly and adequately dealt with. Further, it is the opinion of the California Council of the Blind that the most reasonable and sensible action that the CTCDC can take at this time is to convene a meeting with all interested stakeholders to draft an updated section 9-04.8 of the California Traffic Manual, which eventually would be brought to the committee with the recommendation for adoption. Finally, we feel this

action would be more preferable than amending section 4E.06 during a public meeting, which probably would not be a productive use of the committee's time or generate a well thought out accessible pedestrian signal section for the next edition of the Caltrans manual.

If the committee or a committee member may have any questions regarding this correspondence, please feel free to call me at (916) 278-6988.

Sincerely,

Eugene Lozano Jr.

Eugene Lozano, Jr.,
Chairperson, Committee on Access and Transportation,
California Council of the Blind
4537 Sycamore Avenue, Sacramento, CA 95841

cc: Catherine Skivers, President
California Council of the Blind

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CALIFORNIA COUNCIL OF THE BLIND

Resolution 2001B-5 Accessible Pedestrian Signals Minimum Standards

WHEREAS, the California Council of the Blind (CCB) has, for many years, advocated strongly for the use of accessible pedestrian signals, and has been a leader in providing advice on the most appropriate standards to govern their use and installation; and

WHEREAS, subsequent to the adoption of accessible pedestrian signals standards in the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices 2000 millennium edition, as well as accessible pedestrian signals recommendations January 10, 2001 by the Public Rights-of-Way Access Advisory Committee (PROWAAC) of the Federal Access Board, the California Traffic Control Devices Committee is examining the extent to which changes should be made in the audible pedestrian signals guidelines contained in the California Traffic Manual; and

WHEREAS, the CCB, pursuant to Resolution 2001A-1, expressed its view that neither the FHWA standards nor the PROWAAC recommendations were wholly satisfactory, and that California should not, in adopting changes to its guidelines, accept the totality of either federal document; and

WHEREAS, the CCB, at the behest of the California Traffic Control Devices Committee (CTCDC), is providing input on proposed changes to the aforementioned manual, NOW, THEREFORE, BE IT

RESOLVED, by the California Council of the Blind, in convention assembled this 4th day of November 2001, in the city of Los Angeles, California that this organization urge the California Traffic Control Devices Committee (CTCDC) to include all of the following requirements in the California Traffic Manual:

(1) Whenever the state or a local jurisdiction is evaluating the desirability of placing accessible pedestrian signals at a specific existing signalized location, the professional to be consulted in this matter shall be an orientation and mobility instructor certified by the Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP);

(2) The state or a local jurisdiction shall not require or request that organizations who represent pedestrians who have disabilities and other community organizations be in agreement that there is a widespread community demand for the installation of an accessible pedestrian signal at a specific existing signalized location;

(3) Whenever the state or a local jurisdiction is installing a new, or upgrading an existing traffic signal, the signal shall be automatically equipped with accessible pedestrian signals;

(4) The following minimum features requirements shall apply to all accessible pedestrian signals (including overhead devices) that are installed in the state:

(a) All accessible pedestrian signals must have an auditory tone to announce the walk interval. Until ongoing research has been concluded, the auditory tones shall be limited to two options, either a Cuckoo walk sound for a crosswalk in the North-South direction and a Peep-Peep walk sound for a crosswalk in the East-West direction (the closest proximity to these compass directions) or verbal messages to communicate the walk interval that provides a clear message that the walk interval is in effect, as well as to which crossing it applies.

(b) All accessible pedestrian signals must have vibrotactile devices to indicate both that the walk interval is in effect and to which direction it applies, through the use of a vibrating directional arrow or some other means;

(c) All accessible pedestrian signals must have a pedestrian push button with a locator tone;

(d) All audible tones and locator tones must automatically adjust in volume in relation to the ambient noise level;

(e) Activation of the pedestrian traffic signal shall simultaneously activate the accessible pedestrian signal;

(f) All Pedestrian push buttons that activate an accessible pedestrian signal must be marked with a universal tactile and visual symbol that identifies that there is an accessible pedestrian signal at the crossing, and BE IT FURTHER

RESOLVED that these standards not prohibit the state or a local jurisdiction from providing additional accessible pedestrian signal features if requested by organizations who represent pedestrians who have disabilities, other community organizations, and/or individuals, and BE IT FURTHER

RESOLVED, that this organization transmit a copy of this resolution to the Federal Access Board for use in its consideration of future guidelines on this subject, and BE IT FURTHER

RESOLVED, that this organization transmit a copy of this resolution to the American Council of the Blind for consideration by the ACB Board of Directors or at the 2002 ACB Convention.

Americans closer to the point where the need of this growing population is better addressed and met; and

BE IT FURTHER RESOLVED that this organization urge Congress and the Administration to amend the Older Americans Act to include enabling legislation for programming and also funding in increasing increments for rehabilitation services for older blind and visually impaired individuals to add more ways of reaching and teaching the members of this able and woefully under-served population.

Resolution 99-11

WHEREAS, the Transportation Equity Act for the Twenty-First Century (T 21) authorizes matching federal funds for the installation of audible traffic signals throughout America; and

WHEREAS, the National Federation of the Blind is on record opposing the wholesale installation of these signals, as most recently set forth in Resolution 92-06; and

WHEREAS, good independent travel training enables the vast majority of blind people to negotiate safely and competently virtually all traffic intersections, a fact that would make wholesale installation of audible traffic signals a wasteful, unnecessary expenditure of scarce public funds; and

WHEREAS, massive deployment of audible signals will only create an unwise reliance on electronic devices by blind persons who must rely upon their own senses and skills for their own safety; and

WHEREAS, audible traffic signals can in fact make intersections more dangerous by masking the sound of traffic, which blind people rely upon to determine traffic patterns; and

WHEREAS, activation of the visual walk sign should not also be the means of activating an audible traffic signal since the interconnection of the two would make use of audible signals mandatory for everyone whenever the walk sign button is pressed; and

WHEREAS, audible traffic signals may in rare cases be helpful to some blind people at complicated intersections with confusing road patterns; and

WHEREAS, the only practical and effective audible signals are those which are pedestrian-activated and do not interfere with the sound of traffic; and

WHEREAS, pedestrian-activated audible traffic signals are the only kind of signal that should ever be installed to assist blind persons and should never be installed at the demand of one or a small number of blind persons but rather only after giving blind members of the community and organizations representing the blind a full opportunity to participate in the decision-making process; and

WHEREAS, many members of the sighted public mistakenly believe that all blind people must depend on other persons or electronic devices to cross streets safely and therefore believe they are helping the blind by putting audible traffic signals in the community: Now, therefore,

BE IT RESOLVED by the National Federation of the Blind in Convention assembled this sixth day of July, 1999, in the City of Atlanta, Georgia, that this organization reaffirm its opposition to the wholesale installation of audible traffic signals by state and local governments; and

BE IT FURTHER RESOLVED that this organization call upon any governmental or other entity considering the installation of audible signals to consult extensively with elected representatives of local organizations of the blind, and particularly with the National Federation of the Blind, before any decision regarding audible traffic signals is made.

Resolution 99-12

WHEREAS, literacy is now viewed as a fundamental right for all Americans in addition to its crucial roles in independence, employment, and citizenship, and literacy for blind and visually impaired persons means the ability to read and to write Braille efficiently: and

WHEREAS, failure to provide Braille instruction on a consistent basis is detrimental to the development of literacy, future academic success, and employment prospects of blind and visually impaired children; and

WHEREAS, statistics from the American Printing House for the Blind indicate that only 10 percent of children who are blind or visually impaired use Braille while in contrast recent research reveals that 80 percent of successful blind/visually impaired adults who are employed use Braille every day; and

WHEREAS, these statistics suggest that America's schools are creating a generation of illiterate, unemployable future blind adults; and

WHEREAS, the 1997 amendments to the Individuals with Disabilities Education Act (IDEA) require that schools must provide for instruction in Braille and the use of Braille in the case of each blind and visually impaired child unless the team responsible for choosing special services for the child determines that such instruction or use of Braille is not appropriate for the child; and

WHEREAS, the 1997 amendments to IDEA recognize the critical need for Braille services by placing an affirmative obligation on the team responsible under the law for planning special services to provide for Braille, absent a spe-

This story is taken from news at sacbee.com.

For pedestrians, a countdown to the future

By Matthew Barrows -- Bee Staff Writer - (Published March 16, 2002)

The traditional "Walk/Don't Walk" signs that control the ebb and flow of pedestrian traffic in American cities are marking their 50th anniversary this year. Whether they'll remain for another 50 years, however, seems unlikely given a challenge from a new pedestrian-friendly device that has been popping up on California street corners. Called countdown signals, the new signs take the guesswork out of crossing the street by ticking down the seconds a walker has to make it to the other side.

Stockton is one of six California cities participating in a pilot program to test the new signals. The city has installed them at five points along Hammer Lane, a thoroughfare that grows to 11 lanes at some intersections. And while crossing 11 lanes on foot is tough, it's a heart-thumping adventure in a wheelchair, said resident Pat Shay. "It can get spooky," said Shay, 58, who revs her electric wheelchair to its highest setting just before crossing. "You get midway and you don't know if the cars are going to start up." But halfway across Hammer Lane on Thursday, Shay knew she still had 15 seconds -- plenty of time -- to reach the other side. "This is much better," she said. Traffic engineers are reaching the same conclusion.

The state Transportation Department's Traffic Control Devices Committee, which sets standards for everything from pedestrian signals to street signs, has been receiving positive feedback from the test cities and is expected to give the countdown signals its seal of approval within the next year.

Sacramento County was the first in California to experiment with the signals, installing them at six intersections in 1998. A plan to place them throughout the county, however, had to be put on hold when the state's energy crisis forced the county to spend its signal funds elsewhere. The city of Sacramento intends to place its first countdown signal on Stockton Boulevard near Fruitridge Road next year.

And a yearlong test at eight intersections in San Francisco was such a success that the city plans to install 3,000 countdown signals at nearly 600 intersections. A flood of countdown signals, of course, would wash away conventional "Walk/Don't Walk" signs that, as far as transportation officials can tell, first were installed in New York City in 1952.

At that time Victor Ross was beginning a career with New York's fledgling Transportation Department, which had been charged with curbing an alarming number of pedestrian fatalities. Despite a soaring population in the early 1950s, Ross said, New York City was geared for automobiles. Traffic signals had only two colors -- red and green -- and pedestrians had no protection. "People crossed with great fear," said Ross, 78. "People were getting knocked off left and right. It was awful for pedestrians."

In 1952, Ross said, a city electrical engineer named Lawrence Lawton developed a signal that had a white "WALK" light and red "DON'T WALK" light that coordinated with the traffic signals. One set was placed at 44th Street near the New York Times building, and another set at Herald Square near Macy's -- two areas with heavy foot traffic. Ross said the signals survived New York's snow and rain and soon became part of not only New York's landscape but also of every other urban area's as well. But despite their universal appeal, traffic engineers say they have always been baffled by how many people don't understand "WALK/DON'T WALK" and its counterpart, the walking white-lit man and the flashing red hand.

Jose Alire, with the city of Fountain Valley in Orange County, said that when the red hand starts flashing, many pedestrians -- especially older walkers -- abort their crossing and turn back, unaware that a flashing hand means they still have time to get across. Conversely, others leave the curb during a flashing hand even though there isn't sufficient time to cross. Most cities give pedestrians at least one second for every 4 feet of intersection. "To traffic engineers, it's always been puzzling," Alire said. "We've tried to educate the public, but there's never been a clear understanding." Fountain Valley's countdown signals have been a hit, Alire said, because pedestrians automatically seem to understand how they work. When the hand starts flashing on countdown signals, it is accompanied by red numerals that tick -- second by second -- down to zero.

During San Francisco's study, Pedestrian Program Manager Frank Markowitz said the number of pedestrians caught in the intersection when their light turned red decreased significantly because people tended to quicken their pace as the clock wound down.
The percentage of people who aborted their crossing also was reduced.

Henri Arcand works for GELcore, a Montreal-based company that manufactures the signals. Arcand said countdown signals have been especially popular near schools and senior centers. One reason is that those areas tend to have heavy foot traffic. But more importantly, children and senior citizens are the two groups most likely to be killed in a pedestrian accident. Arcand said older walkers often lack the confidence to cross large intersections. The countdown signals, he said, give them information they lacked with the conventional devices. And he said most children intuitively realize what the countdown means. When conventional and countdown signals were shown to Montreal-area schoolchildren, Arcand said, about 30 percent knew how to interpret the conventional devices as opposed to an 85 percent comprehension rate with the countdowns.

Said Arcand: "When you put a timer on the street corner, they immediately know what it means."
About the Writer

The Bee's Matthew Barrows can be reached at (916) 321-1008 or mbarrows@sacbee.com .